**UNITED STATES DISTRICT COURT**
**WESTERN DISTRICT OF TEXAS**
**WACO DIVISION**

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| **PARKERVISION, INC.,**<br>Plaintiff,<br>**v.**<br>**MEDIATEK INC. and**<br>**MEDIATEK USA INC.**<br>Defendants. | **Case No. 6:23-cv-00375**<br>**JURY TRIAL DEMANDED** |

## COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff ParkerVision, Inc. ("ParkerVision"), by and through its undersigned counsel, files this Complaint against Defendants MediaTek Inc. and MediaTek USA Inc. (collectively, "MediaTek" or "Defendants") for patent infringement of United States Patent Nos. 7,483,686; 7,865,177; and 9,118,528 (the "patents-in-suit") and alleges as follows:

## NATURE OF THE ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq*.

## PARTIES

2. Plaintiff ParkerVision is a Florida corporation with its principal place of business at 4446-1A Hendricks Avenue, Suite 354, Jacksonville, Florida 32207.

3. On information and belief, MediaTek Inc. ("MediaTek Taiwan") is a foreign corporation organized and existing under the laws of Taiwan with a principal place of business located at No. 1, Dusing Road 1, Hsinchu Science Park, Hsinchu City 30078, Taiwan.

4. On information and belief, Defendant MediaTek USA Inc. ("MediaTek USA") is a corporation organized and existing under the laws of the state of Delaware with a place of business in the Western District of Texas, including at 5914 West Courtyard Drive, Suite 400, Austin, TX 78730. https://corp.mediatek.com/about/office-locations/mediatek-usa-offices.

5. On information and belief, MediaTek USA is a subsidiary of MediaTek Taiwan and engages in sales, advertising, marketing, and/or research in the United States on behalf of, and under the control of MediaTek Taiwan. *See* https://www.mediatek.com/who-we-are.

6. MediaTek Taiwan and MediaTek USA are companies which together comprise one of the world's largest manufacturers of integrated circuits, powering more than 2 billion devices a year. *See* https://www.mediatek.com/who-we-are. MediaTek Taiwan designs, develops, manufactures, and ships integrated circuits/wireless chips to be sold in the United States (including to entities in Texas). On information and belief, MediaTek USA sells, advertises, and markets integrated circuits/wireless chips on behalf of, and under the control of MediaTek Taiwan.

**V. Business Activities**

**1. Business Scope**

1.1. Business Scope

**1.1.1 The Main Business Activities of the Company**

A. Design, develop, produce, manufacture and market the following products:
   a. Multimedia Integrated Circuits (IC);
   b. Computer peripheral ICs;
   c. High-end digital consumer ICs;
   d. Other application specific ICs;
   e. Patent and circuit-layout licensing and services of the above-mentioned products
B. Provide the above-mentioned products with software and hardware application design, test, maintenance, and technological consultation services
C. Import and export of the above-mentioned products

https://cdn-www.mediatek.com/posts/2021-English-Annual-Report_Final.pdf at page 64.

7. MediaTek Taiwan and MediaTek USA share the same management, common ownership, advertising platforms, facilities, distribution chains and platforms, and infringing product lines and products involving related technologies. According to MediaTek, the "[b]usiness scope of MediaTek and its affiliates include the investment, R&D, promotion, after-sale service for optical storage products, digital consumer products, wireless communication, digital TV, networking, analog, etc.," and "MediaTek affiliates support the Company's core business by acquiring leading technology through investments." *See* https://cdn-www.mediatek.com/posts/2021-English-Annual-Report_Final.pdf at page 106.

8. On information and belief, MediaTek Taiwan and MediaTek USA are operated as a single business entity and/or in concert with each other to sell, offer to sell, import, market, advertise, and/or otherwise promote the infringing products (receiver and/or transceiver integrated circuits (e.g., chips for use in wireless devices)) in the United States, including in the State of Texas generally and this judicial district in particular. On information and belief, the Defendants share directors, executives and/or employees. For example, Mr. David Ku is an Executive Vice President and CFO of MediaTek Taiwan and a Director of MediaTek USA. *See* https://cdn-www.mediatek.com/posts/2021-English-Annual-Report_Final.pdf at page 21:

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|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Executive Vice President & CFO & Spokesman David Ku** | R.O.C. | Male | Jan. 1, 2011 | 314,788 | 0.02% | - | - | - | - | - MBA, University of Illinois at Urbana Champaign<br>- Vice President of JPMorgan Investment bank | - Chairman / Director, MediaTek's affiliates and invested companies | None |

*See* https://cdn-www.mediatek.com/posts/2021-English-Annual-Report_Final.pdf at page 111:

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|---|---|---|---|---|
| MediaTek USA Inc. | Director | David Ku | MTK Wireless Limited (UK) 111,815 | 100 |
| | Director | Kevin Jou | MTK Wireless Limited (UK) 111,815 | 100 |

9. On information and belief, MediaTek Taiwan controls the business decisions of its affiliates including, but not limited to, MediaTek USA.

10. Thus, on information and belief, MediaTek Taiwan and MediaTek USA operate as a unitary business venture and are jointly and severally liable for the acts of patent infringement alleged herein.

## JURISDICTION AND VENUE

11. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the patent laws of the United States, 35 U.S.C. §§ 1 *et seq*.

12. MediaTek Taiwan and MediaTek USA are subject to this Court's personal jurisdiction in accordance with due process and/or the Texas Long-Arm Statute. *See* Tex. Civ. Prac. & Rem. Code §§ 17.041 *et seq*.

13. This Court has personal jurisdiction over MediaTek Taiwan and MediaTek USA because MediaTek Taiwan and MediaTek USA have sufficient minimum contacts with this forum as a result of business conducted within the State of Texas and this judicial district. In particular, this Court has personal jurisdiction over MediaTek Taiwan and MediaTek USA because, *inter alia*, MediaTek Taiwan and MediaTek USA, on information and belief, have substantial, continuous, and systematic business contacts in this judicial district, and derive substantial revenue from goods provided to individuals in this judicial district.

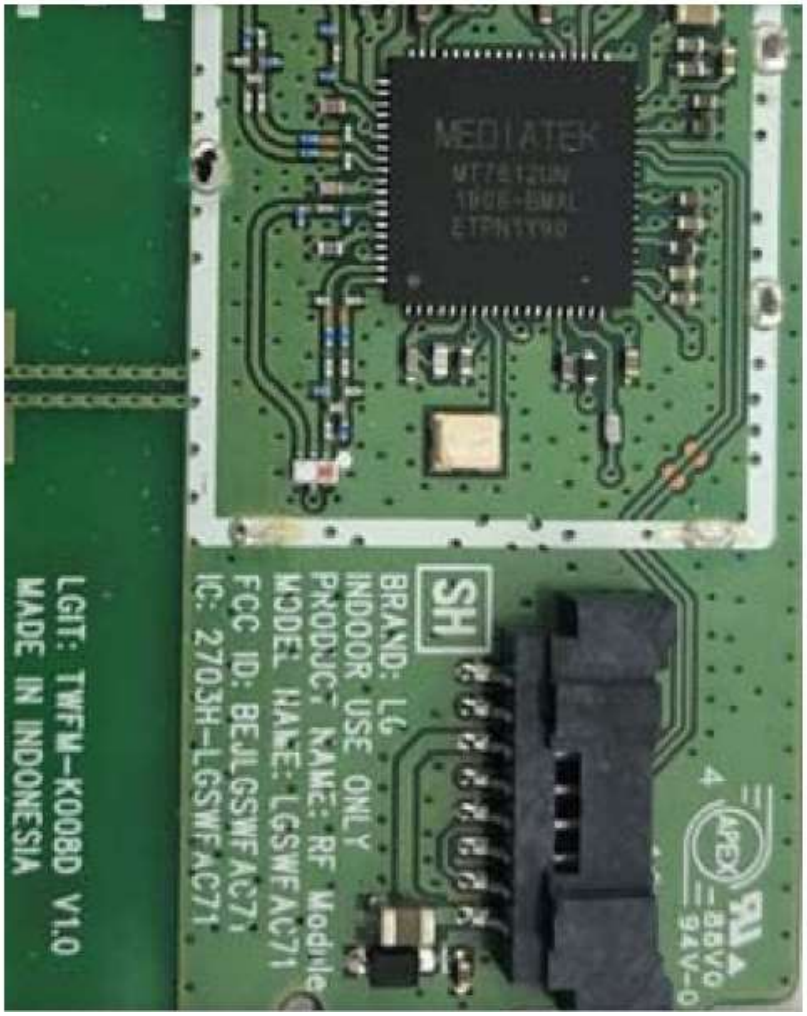
14. MediaTek Taiwan and MediaTek USA have purposefully availed themselves of the laws of, and of the privileges of, conducting business within this judicial district, have established sufficient minimum contacts with this judicial district such that they should reasonably and fairly anticipate being hauled into court in this judicial district, have purposefully directed activities at residents of this judicial district, and at least a portion of the patent

infringement claims alleged in this Complaint arise out of or are related to one or more of the foregoing activities.

15. MediaTek Taiwan and MediaTek USA are part of the same corporate structure and distribution chain for the making, importing, offering to sell, selling, and/or using of the infringing products in the United States, including in the State of Texas generally and this judicial district in particular.

16. This Court has personal jurisdiction over MediaTek Taiwan and MediaTek USA because MediaTek Taiwan (directly and/or through its subsidiaries, affiliates, or intermediaries) and MediaTek USA have committed and continue to commit acts of infringement in this judicial district in violation of at least 35 U.S.C. § 271(a). In particular, on information and belief, MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA (or those acting on its behalf) use, sell, offer for sale, import, advertise, and/or otherwise promote infringing products (receiver and/or transceiver integrated circuits (e.g., chips for use in wireless devices)) in the United States, the State of Texas, and this judicial district. The infringing products include, without limitation, the MediaTek MT7612UN and MT7662TU ("MediaTek Chips").

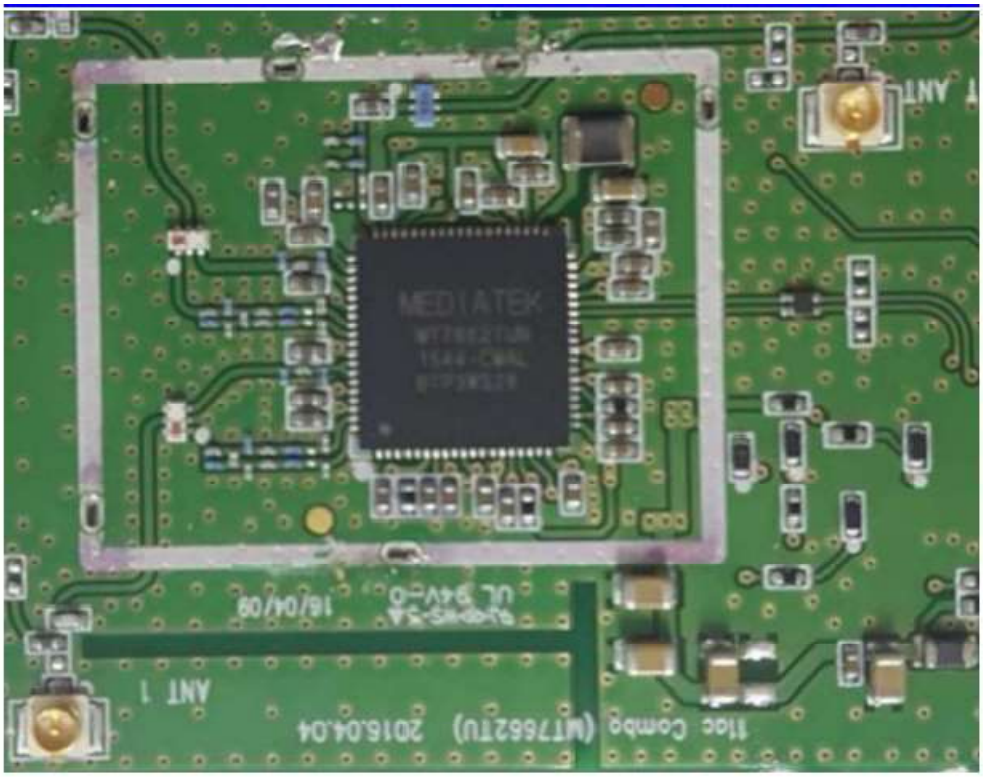
17. On information and belief, at least the following LG television models sold/offered for sale in the United States contain the MediaTek MT7612UN: (UK620*) - 65UK6200PUA, 55UK6200PUA, 49UK6200PUA, 43UK6200PUA; (UK60*) - 65UK6090PUA, 60UK6090PUA, 55UK6090PUA, 50UK6090PUA; (UK61*) - 32UK610BPA, 75UK6190PUB, 70UK6190PUB. *See* https://fccid.io/BEJLGSWFAC71/Internal-Photos/internal-photos-4532635.pdf:




*See also* https://fccid.io/BEJLGSWFAC71/Users-Manual/User-Manual-3136306 at page 2.

18. On information and belief, at least the following LG television models sold/offered for sale in the United States contain the MediaTek MT7662TU: 65SK9500PUA, 55SK9500PUA, 65SK9550PUA, 65SK9000PUA, 55SK9000PUA, 65SK8550PUA, 55SK8550PUA, 75SK8070PUA, 75SK8050PUA, 75SK8070AUB, 65SK8000AUB, 55SK8000AUB, 65SK8000PUA, 55SK8000PUA, 49SK8000PUA, 65SK8050PUA, 55SK8050PUA, 49SK8050PUA, 65UK7700AUB, 65UK7700PUD, 55UK7700AUB, 55UK7700PUD, 49UK7700AUB, 49UK7700PUD, 65UK7500PUA, 55UK7500PUA, 49UK7500PUA, 86UK6570PUB, 75UK6570PUB, 75UK6570PUA, 86UK6570AUA,

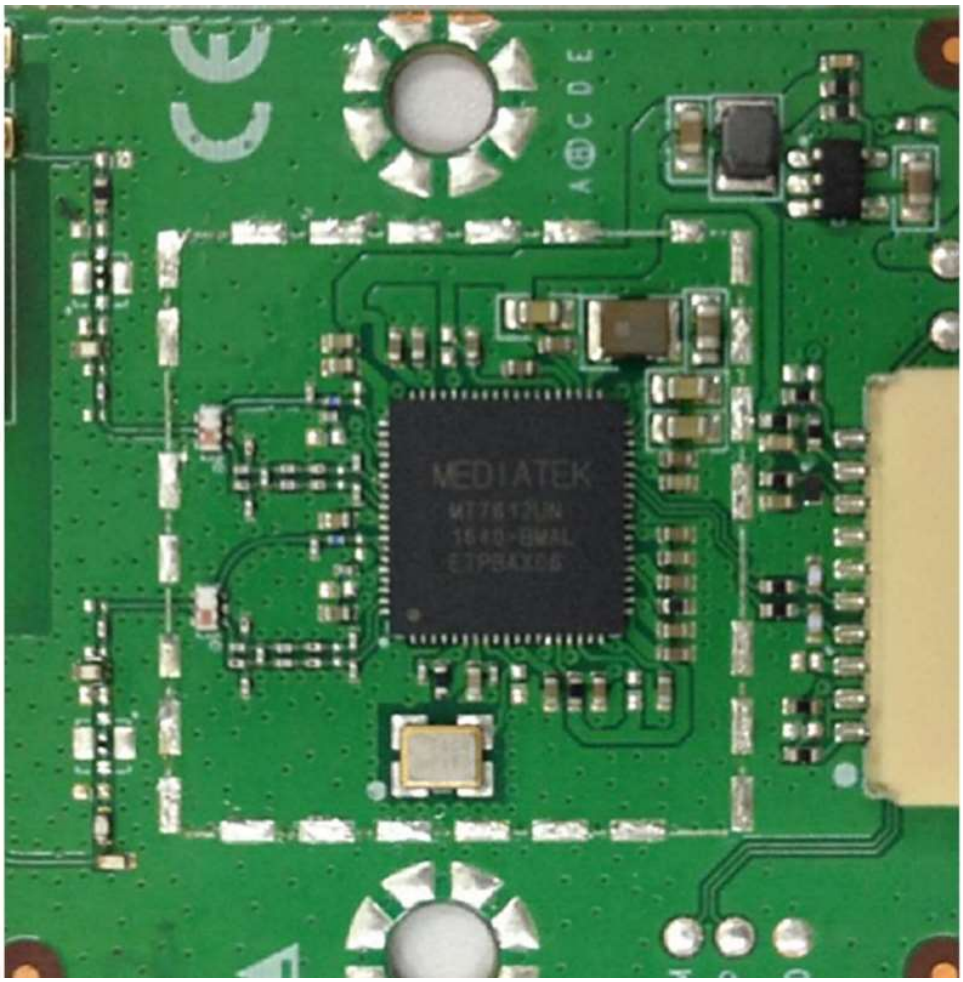
75UK6570AUA, 70UK6570PUB, 70UK6550PUA, 70UK6570AUB, 65UK6500AUA, 55UK6500AUA, 50UK6500AUA, 43UK6500AUA, 65UK6550PUB ,55UK6550PUB, 50UK6550PUB, 43UK6550PUB, 65UK6300PUE, 55UK6300PUE, 50UK6300PUE, 49UK6300PUE, 43UK6300PUE, 65UK6300BUB, 65UK6350PUC, 55UK6300BUB, 55UK6350PUC, 50UK6300BUB, 49UK6300BUB, 49UK6350PUC, 43UK6300BUB, 43UK6350PUC, 50UK6350PUC, 86UK7570PUB, 49LK5750PUA, OLED77C8PUA, OLED65B8PUA, OLED65B8SUC, OLED65C8PUA, OLED65C8AUA, OLED65E8PUA, OLED55B8PUA, OLED55B8SUC, OLED55C8PUA, OLED55C8AUA, OLED55E8PUA. *See* https://fccid.io/BEJLGSBWAC72/Internal-Photos/Internal-Photos-3078782.pdf:




*See also* https://fccid.io/BEJLGSBWAC72/Users-Manual/User-Manual-3078852 at page 2.

19. On information and belief, the Sharp-branded Hisense television model no. LC-55P6000U (below) was sold/offered for sale in the United States and included a MediaTek MT7612UN chip.

*See* https://fccid.io/2AJVQ-ZDGFMT7612U/Internal-Photos/Internal-Photos-3377285:



20. On information and belief, MediaTek knew or should have known that its chips would be incorporated into products (such as the televisions identified above) that would be used, sold, offered for sale, and/or imported in the United States, the State of Texas, and this judicial district. MediaTek Taiwan intended that its products be sold in the United States and affirmatively directed its products to the United States market.

21. Accordingly, MediaTek Taiwan and MediaTek USA have placed infringing products into the stream of commerce by shipping infringing products into Texas, shipping infringing products knowing that those products would be shipped into Texas, and/or shipping infringing products knowing that those infringing products would be incorporated into other infringing products that would be shipped into Texas.

22. On information and belief, MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA have a regular and established place of business within the Western District of Texas, including 5914 West Courtyard Drive, Suite 400, Austin, TX 78730. On information and belief, MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA have physical facilities and employees in this judicial district. On information and belief, MediaTek Taiwan operates the website for MediaTek USA, including job postings for the Austin office. On information and belief, MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA maintain additional offices and employees in Texas including at 825 Watters Creek Blvd, Suite 265, Allen, TX 75103.

23. MediaTek Taiwan and MediaTek USA have purposefully and repeatedly availed themselves of the laws of the United States, this judicial district, and the State of Texas by filing affirmative counterclaims in the following litigations: *Ocean Semiconductor LLC v. MediaTek*

*Inc. et al.,* 6-20-cv-01210 (W.D. Tex.); *Nippon Telegraph and Telephone Corporation et al. v. MediaTek Inc. et al.,* 1-20-cv-00632 (W.D. Tex.); *American Patents LLC v. Analog Devices, Inc. et al.,* 6-18-cv-00356 (W.D. Tex.); *Blue Sky Networks, LLC v. MediaTek USA, Inc. et al.,* 1-17-cv-00656 (W.D. Tex.).

24. Moreover, MediaTek Taiwan affirmatively brought suit in federal court in the State of Texas. *See MediaTek, Inc. v. Matsushita Electric Industrial Co., Ltd. et al.*, 2-05-cv-00484 (E.D. Tex.); *MediaTek, Inc. v. Sanyo Electric Co. Ltd., et al.,* 6-05-cv-00323 (E.D. Tex.).

25. [redacted]

26. This case is related to at least the following cases before this Court and involves a common patent/technology: *ParkerVision, Inc. v. TCL Industries Holdings Co., Ltd. et al.*, 6:20-cv-00945 (W.D. Tex.), *ParkerVision, Inc. v. LG Electronics, Inc.*, 6:21-cv-00520 (W.D. Tex.). This case is also related to at least the following case before this Court and involves common parties and products: *ParkerVision, Inc. v. MediaTek Inc. et al.*, 6:22-cv-01163 (W.D. Tex.).

27. Venue is proper in this judicial district under 28 U.S.C. §§ 1391(b)-(d) and/or 1400(b) at least because MediaTek Taiwan is a foreign corporation subject to personal jurisdiction in this judicial district and has committed acts of infringement within this judicial district giving rise to this action.

28. Alternatively, the Court has personal jurisdiction over MediaTek Taiwan under Federal Rule of Civil Procedure 4(k)(2). This cause of action arises under federal law, MediaTek Taiwan is not subject to general jurisdiction in any one state, and the exercise of jurisdiction is consistent with the United States Constitution.

**PARKERVISION**

29. In 1989, Jeff Parker and David Sorrells started ParkerVision in Jacksonville, Florida. Through the mid-1990s, ParkerVision focused on developing commercial video cameras, e.g., for television broadcasts. The cameras used radio frequency (RF) technology to automatically track the camera's subject.

30. When developing consumer video cameras, however, ParkerVision encountered a problem – the power and battery requirements for RF communications made a cost effective, consumer-sized product impractical. So, Mr. Sorrels and ParkerVision's engineering team began researching ways to solve this problem.

31. At the time, a decade's-old RF transceiver technology called super-heterodyne dominated the consumer products industry. But this technology was not without its own problems – the circuity was large, expensive, and required significant power.

32. From 1995 through 1998, ParkerVision engineers developed an innovative method of RF direct conversion by a process of sampling an RF carrier signal and transferring energy to create a down-converted baseband signal.

33. After creating prototype chips and conducting tests, ParkerVision soon realized that its technology led to improved RF receiver performance, lower power consumption, reduced size and integration benefits. In other words, RF receivers could be built smaller, cheaper and with greater improved performance.

34. ParkerVision's innovations did not stop there. ParkerVision went on to develop additional RF direct down-conversion technologies, RF direct up-conversion technologies and other related direct-conversion technologies. ParkerVision also developed complementary

wireless communications technologies that involved interactions, processes, and controls between the baseband processor and the transceiver, which improved and enhanced the operation of transceivers that incorporate ParkerVision's down-converter and up-converter technologies. To date, ParkerVision has been granted over 200 patents related to its innovations, including the patents-in-suit.

35. ParkerVision's technology helped make many of today's wireless devices a reality by enabling RF chips used in these devices to be smaller, cheaper, and more efficient, and with higher performance.

36. ParkerVision sold products. To the extent ParkerVision products needed to be marked with a ParkerVision patent number, ParkerVision marked those products in compliance with 35 U.S.C. § 287.

**PRIOR DISCUSSIONS BETWEEN THE PARTIES**

37. In April 2010, ParkerVision met with MediaTek USA (including, without limitation, Jim Chapman) and made a presentation regarding ParkerVision's technology. ParkerVision provided MediaTek USA with a copy of the presentation, which discusses ParkerVision's direct-conversion technology. Upon information and belief, ParkerVision discussed its patented wireless direct down-conversion technology, which ParkerVision marketed under the name Direct-to-Data (D2D), with MediaTek USA. ParkerVision's D2D technology is related to the patents-in-suit.

38. [redacted]

39. [redacted]

40. [redacted]

## THE ASSERTED PATENTS

### United States Patent No. 7,483,686

41. On January 27, 2009, the United States Patent and Trademark Office duly and legally issued United States Patent No. 7,483,686 ("the '686 patent") entitled "Universal Platform Module and Methods and Apparatuses Relating Thereto Enabled by Universal Frequency Translation Technology" to inventor David F. Sorrells et al.

42. The '686 patent is presumed valid under 35 U.S.C. § 282.

43. ParkerVision owns all rights, title, and interest in the '686 patent.

### United States Patent No. 7,865,177

44. On January 4, 2011, the United States Patent and Trademark Office duly and legally issued United States Patent No. 7,865,177 ("the '177 patent") entitled "Method and System for Down-Converting An Electromagnetic Signal, And Transforms For Same, And Aperture Relationships" to inventor David F. Sorrells et al.

45. The '177 patent is presumed valid under 35 U.S.C. § 282.

46. ParkerVision owns all rights, title, and interest in the '177 patent.

### United States Patent No. 9,118,528

47. On August 25, 2015, the United States Patent and Trademark Office duly and legally issued United States Patent No. 9,118,528 ("the '528 patent") entitled "Method and System for Down-Converting an Electromagnetic Signal, and Transforms for Same, and Aperture Relationships" to inventor David F. Sorrells et al.

48. The ’528 patent is presumed valid under 35 U.S.C. § 282.

49. ParkerVision owns all rights, title, and interest in the ’528 patent.

## CLAIMS FOR RELIEF

### COUNT I - Infringement of United States Patent No. 7,483,686

50. The allegations set forth above are re-alleged and incorporated by reference as if they were set forth fully here.

51. MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA directly infringe (literally and/or under the doctrine of equivalents) the ’686 patent by making, using, selling, offering for sale, and/or importing in/into the United States products covered by at least claim 11 of the ’686 patent.

52. On information and belief, MediaTek products that infringe at least claim 11 of the ’686 patent include, but are not limited to, the MediaTek Chips and any other MediaTek product that is capable of performing simultaneous multi-platform operations as claimed in the ’686 patent. On information and belief, MediaTek uses the MediaTek Chips at least by testing or demonstrating the MediaTek Chips (or having others do so on its behalf) in the United States.

53. On information and belief, MediaTek Chips including, without limitation, the MediaTek MT7612UN and MT7662TU (“Multi-platform MediaTek Chip”) perform simultaneous multi-platform operations (e.g., Wi-Fi and Bluetooth operations). MediaTek infringes each step of claim 11 because the Multi-platform MediaTek Chips automatically, and without user modification, perform each of the claimed steps.

54. On information and belief, each Multi-platform MediaTek Chip meets wireless telecommunication standards including, but not limited to, IEEE 802.11a, 802.11b, 802.11g,

802.11n, 802.11ac, and Bluetooth. *See, e.g.,* https://www.mediatek.com/products/broadband-wifi/mt7612u; https://www.mediatek.com/products/broadband-wifi/mt7662u.

55. On information and belief, each Multi-platform MediaTek Chip controls at least one multi-platform module (e.g., a module having a plurality of receiver and transmitter paths, which handle multiple communication protocols (e.g., Wi-Fi, Bluetooth)) to communicate with at least one of a plurality of communication links (e.g. wireless or Bluetooth links) using a control module (e.g., a module having hardware, firmware/software, or a combination thereof for controlling receiving, transmitting, and/or processing of signals of two or more communication protocols/links) having a plurality of standard/protocol sub-modules (e.g., modules each having hardware, firmware/software, or a combination thereof for controlling receiving, transmitting, and/or processing of signals associated with a particular communication protocol/link).

56. On information and belief, the at least one multi-platform module includes a plurality of transceivers (e.g., a plurality of receiver and transmitter paths, where each transceiver includes at least one receiver path and one transmitter path) each having at least one frequency translation module (e.g., a module having components used in the process of down-converting an RF signal from a higher frequency to a lower frequency).

57. On information and belief, the at least one frequency translation module comprises a switch (e.g., one or more transistors) configured to operate according to an energy transfer signal (e.g., a local oscillator (LO) signal), and to sub-sample and transfer energy from a first electromagnetic (EM) signal (e.g., high frequency RF signal). On information and belief, each Multi-platform MediaTek Chip sub-samples the first EM signal by a transistor(s) turning ON and OFF as controlled by a 25% duty cycle LO signal. The sub-sampling occurs over

aperture periods (e.g., periods of time when the transistor(s) is ON/receives an LO signal) to transfer energy from the EM signal.

58. On information and belief, the at least one frequency translation module comprises a storage module (e.g., one or more capacitors) coupled to the switch (e.g., one or more transistors) and is configured to store the transferred energy (e.g., as current passes through the switch).

59. On information and belief, a second EM signal (e.g., a baseband signal) is generated from the stored energy (e.g., when a capacitor(s) discharge(s) to a load), the second EM signal having a frequency different (a lower frequency) from the first EM signal (e.g., high frequency RF signal).

60. On information and belief, each Multi-platform MediaTek Chip operates a first transceiver (e.g., at least one receiver path and one transmitter path) in conformance with a first protocol/standard combination (e.g., Wi-Fi protocol/standard) using a first standard/protocol sub-module (e.g., a sub-module controlling Wi-Fi communications).

61. On information and belief, each Multi-platform MediaTek Chip operates a second transceiver (e.g., at least one receiver path and one transmitter path) in conformance with a second protocol/standard combination (e.g., Bluetooth protocol/standard) using a second standard/protocol sub-module (e.g., a sub-module controlling Bluetooth communications).

62. ParkerVision has been damaged by the direct infringement of MediaTek and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

**COUNT II - Infringement of United States Patent No. 7,865,177**

63. The allegations set forth above are re-alleged and incorporated by reference as if they were set forth fully here.

64. MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA directly infringe (literally and/or under the doctrine of equivalents) the ’177 patent by making, using, selling, offering for sale, and/or importing in/into the United States products covered by at least claim 14 of the ’177 patent. MediaTek infringes each step of claim 14 because the MediaTek Chips automatically, and without user modification, perform each of the claimed steps.

65. On information and belief, MediaTek products that infringe at least claim 14 of the ’177 patent include, but are not limited to, the MediaTek Chips, and any other MediaTek product that is capable of down-converting a higher-frequency signal to a lower-frequency signal as claimed in the ’177 patent. On information and belief, MediaTek uses the MediaTek Chips at least by testing or demonstrating the MediaTek Chips (or having others do so on its behalf) in the United States.

66. On information and belief, the MediaTek Chips perform a method for down-converting an electromagnetic signal (e.g., high frequency RF signal). The method is performed on the receiver side of each MediaTek Chip.

67. On information and belief, each MediaTek Chip receives an input signal (e.g., high frequency RF signal) at a first and second matched filtering/correlating module. Each matched filtering/correlating module is linear time-variant circuitry that samples a modulated RF carrier signal at an aliasing rate. On information and belief, sampling is performed using a switch (e.g., one or more transistors), which turns ON and OFF. The switch has an independent control input that is driven by a control signal (e.g., LO signal). On information and belief, the control

signal has non-negligible, periodic apertures (e.g., periods of time when the transistor(s) is ON/receives a 25% duty cycle LO signal). On information and belief, non-negligible amounts of energy from the RF signal are accumulated (e.g., in one or more capacitors in each matched filtering/correlating module) and transferred to a low impedance load (e.g., one or more resistors) during an aperture period (e.g., when the switch is closed (ON)). Each MediaTek Chip meets wireless telecommunication standards including, but not limited to, IEEE 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, and Bluetooth. *See, e.g.,* https://www.mediatek.com/products/broadband-wifi/mt7612u; https://www.mediatek.com/products/broadband-wifi/mt7662u. On information and belief, the capacitor(s) discharges energy through the low impedance load between aperture periods (e.g., when the switch is open (OFF)). In this way, real power from the RF signal is transferred to the low impedance load and produces a down-converted signal with enhanced signal-to-noise power ratio.

68. On information and belief, each MediaTek Chip down-converts the input signal at the first matched filtering/correlating according to a first control signal (e.g., a first LO signal) and outputs a first down-converted signal (e.g., a first baseband signal).

69. On information and belief, each MediaTek Chip down-converts the input signal at the second matched filtering/correlating according to a second control signal (e.g., a second LO signal) and outputs a second down-converted signal (e.g., a second baseband signal).

70. On information and belief, a differential amplifier circuit in each MediaTek Chip combines the second down-converted signal (e.g., second baseband signal) and the first down-converted signal (e.g., first baseband signal) to output a first channel down-converted signal.

71. ParkerVision has been damaged by the direct infringement of MediaTek and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

**COUNT III - Infringement of United States Patent No. 9,118,528**

72. The allegations set forth above are re-alleged and incorporated by reference as if they were set forth fully here.

73. MediaTek Taiwan (including, without limitation, through its subsidiary MediaTek USA) and MediaTek USA directly infringe (literally and/or under the doctrine of equivalents) the ’528 patent by making, using, selling, offering for sale, and/or importing in/into the United States products covered by at least claim 1 of the ’528 patent.

74. On information and belief, MediaTek products that infringe at least claim 1 of the ’528 patent include, but are not limited to, the MediaTek Chips and any other MediaTek product that is capable of down-converting a higher-frequency signal to a lower-frequency signal as claimed in the ’528 patent. On information and belief, MediaTek uses the MediaTek Chips at least by testing or demonstrating the MediaTek Chips (or having others do so on its behalf) in the United States.

75. On information and belief, each MediaTek Chip is/includes a system for frequency down-converting a modulated carrier signal (e.g., high frequency RF signal) to a baseband signal. Each MediaTek Chip includes a first switch (e.g., one or more transistors) coupled to a first control signal (e.g., an LO signal) which comprises a sampling aperture (e.g., 25% duty cycle) with a specified frequency, wherein the first switch is on and a portion of energy that is distinguishable from noise is transferred from the modulated carrier signal (e.g., high frequency RF signal) as an output of the first switch during the sampling aperture of the

first control signal. Each MediaTek Chip meets wireless telecommunication standards including, but not limited to, IEEE 802.11a, 802.11b, 802.11g, 802.11n, 802.11ac, and Bluetooth. *See, e.g.,* https://www.mediatek.com/products/broadband-wifi/mt7612u; https://www.mediatek.com/products/broadband-wifi/mt7662u.

76. On information and belief, each MediaTek Chip includes a first energy storage element (e.g., one or more capacitors) that stores the transferred energy from the modulated carrier signal and outputs a down-converted in-phase baseband signal portion of the modulated carrier signal.

77. On information and belief, each MediaTek Chip includes a second switch (e.g., one or more transistors) coupled to a second control signal (e.g., an LO signal) which comprises a sampling aperture (e.g., 25% duty cycle) with a specified frequency, wherein the second switch is on and a portion of energy that is distinguishable from noise is transferred from the modulated carrier signal (e.g., high frequency RF signal) as an output of the second switch during the sampling aperture of the second control signal.

78. On information and belief, each MediaTek Chip includes a second energy storage element (e.g., one or more capacitors) that stores the transferred energy from the modulated carrier signal and outputs a down-converted inverted in-phase baseband signal portion of the modulated carrier signal.

79. On information and belief, the portions of transferred energy from each of the first and second switch are integrated over time to accumulate the portions of transferred energy from which the down-converted in-phase baseband signal portion and the down-converted inverted in-phase baseband signal portion are derived.

80. On information and belief, each MediaTek Chip includes a first differential amplifier circuit that combines the down-converted in-phase baseband signal portion with the down-converted inverted in-phase baseband signal portion and outputs a first channel down-converted differential in-phase baseband signal.

81. ParkerVision has been damaged by the direct infringement of MediaTek and is suffering and will continue to suffer irreparable harm and damages as a result of this infringement.

## JURY DEMANDED

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure, ParkerVision hereby requests a trial by jury on all issues so triable.

## PRAYER FOR RELIEF

WHEREFORE, ParkerVision respectfully requests that the Court enter judgment in its favor and against MediaTek as follows:

a. finding that MediaTek directly infringes one or more claims of each of the patents-in-suit;

b. awarding ParkerVision damages under 35 U.S.C. § 284, or otherwise permitted by law, including supplemental damages for any continued post-verdict infringement;

c. awarding ParkerVision pre-judgment and post-judgment interest on the damages award and costs;

d. awarding cost of this action (including all disbursements) and attorney fees pursuant to 35 U.S.C. § 285, or as otherwise permitted by the law; and

e. awarding such other costs and further relief that the Court determines to be just and equitable.

Dated: May 17, 2023

Respectfully submitted,

THE MORT LAW FIRM, PLLC

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*#Not admitted in Virginia*
**Pro hac vice to be filed*